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# Avalanche Notes

U.S. Forest Service  
Westwide Avalanche Network

INT FOREST & RANGE  
EXPERIMENT STATION

MAR 27 1986

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FEBRUARY 1986

The Pacific high that normally resides off the coast of California did a disappearing act in February, and this opened the door for an unprecedented storm to hit the Sierra and then sweep inland to the Rockies. In California, they're calling it "the storm of the century."

February began quietly, but even this tranquility was a portent of storms to come, for on the 2nd the western groundhog popped out of his earthly abode and immediately grabbed for the sunshades. While admiring his shadow, he could almost see the clouds gathering over the Pacific.

The storm struck California on the 12th and ended on the 21st. During the 10-day siege, snowfall in the Sierra totalled 100-140 inches, and water from rain and snow exceeded 30 inches at some sites. For days, winds averaged 60-80 mph, but at times were much stronger: Alpine Meadows measured a one-hour average of 115 mph on the 12th, and Squaw Valley measured a peak gust of 171 mph on the 17th! Major damage by avalanche surprisingly did not occur, despite large avalanche releases such as a 14-foot fracture at Kirkwood Meadows and a 21-foot fracture at Mammoth Mtn. There was, however, major and widespread damage in the lowlands both west and east of the Sierra from vast flooding and mudslides. For the month, Mammoth Mtn. recorded 225% of normal snows, and Alpine Meadows, 190%.

The moisture that did not precipitate over the Sierra tracked eastward in the strong zonal flow and ran smack into the Colorado Rockies. Continuous and heavy snows fell there from the 13th-21st. High-density snowfalls and winds gusting to 80 or more triggered a major avalanche cycle from the 13th-23rd. On the 21st, Highlands Bowl at Aspen Highlands fractured 100 feet deep and dropped 3,600 feet in elevation -- the largest slide there in more than 25 years. Geneva Basin released a slide 14 feet deep, the largest in the area's history. And two large slides blocked I-70 for the first time in at least 15 years. Avalanches damaged buildings or other structures at the Henderson Mine, the Madonna Mine, and the Coal Basin Mine; another slide roared across U.S. Hwy 6 and damaged a chairlift at Arapahoe Basin. Monthly snows in Colorado as a percent of normal were: Monarch, 220%; Copper Mtn., 200%; Breckenridge, 195; Berthoud Pass, 190%; Gothic, 175%; Aspen Mtn., Winter Park, and Wolf Creek, all 170%; Crested Butte, 150%; Vail, 140%; and Sunlight, 115%.



Monthly snowfalls (percent of normal) at other sites out of the main storm track were: Alyeska, AK, 97% (helped by 51 inches on the 7th-8th); Mt. Rainier, WA, 83%; Stevens Pass, WA, 95%; Crystal Mtn., WA, 110% (39 inches on the 16th-17th); Sun Valley, ID, 250% (Wow!); Bridger Bowl, MT, 125%; Utah's Wasatch areas, near normal; and Taos, NM, 140%.

For the second year in a row, the month of February was witness to six avalanche fatalities. On the 7th, on Mt. Ellis southeast of Bozeman, MT, two brothers, ages 27 and 33, apparently triggered a large avalanche while ski touring. When they were reported overdue, an air search spotted the avalanche. Several days of searching with probes and dogs failed to locate the victims' bodies. The search will continue through the spring. On the 17th, a ski patroller died in an avalanche at Jackson Hole, WY, the second patroller to die there this winter. This was a post-control release on Moran Face, which had been shot with one round from the 105mm recoilless rifle and then hit with a hand charge. It released when the 37-year-old patroller skied onto it. Although quickly located with beacons, it took 45 minutes to dig out the victim from eight feet of debris. He did respond to resuscitation. Also on the 17th, an 18-year-old snowboarder died when buried in a backcountry slide near Brighton, UT. A rescue dog located the victim, who was pulled from under 4 feet of snow after a 45-minute burial. Death was due to a broken neck. Two days later on the 19th at Alta, UT, a major, natural avalanche broke loose from Sugarloaf and fell onto Secret Lake, where normal slides always stop. This one did not stop, but rather barreled across the lake and over a small ridge, becoming airborne and falling onto a main ski trail. There it caught two skiers, burying one. The 16-year-old victim was uncovered alive but died later at the hospital. The last fatal accident happened on the 26th at Vail, CO. A 39-year-old man, skiing alone, ducked under a rope and entered a closed area low on the mountain. He triggered a wet-slab avalanche that buried him six feet deep in a ravine. He was found about 16 hours later when a rescue dog alerted to a scent and probes made the strike. This was the first avalanche death in the 24-year history of Vail.

In February, 38 reported incidents caught 46 people, partly buried 12, buried 6, injured 5, and killed 6. Fourteen vehicles were caught or damaged, as were three buildings, one lift, and some powerlines. Seasonal figures show 86 people caught, 41 partly or wholly buried, 10 injured, and 14 killed. Through February, 5750 avalanches have been recorded.



U.S. FOREST SERVICE  
ALPINE SNOW AND AVALANCHE RESEARCH PROJECT  
RM STATION FORT COLLINS, COLO.

FEBRUARY 1986

SUMMARY OF WEATHER AND SNOW CONDITIONS

| AREA | TOTAL SNOW-<br>FALL IN. | MAX<br>IN.<br>24 HR. | D<br>T | E | WATER EQUIVALENT     |        |   |          |                         | SNOW DEPTH |        |   | TEMPERATURE |                      |     | WIND SPEED<br>AND DIRECTION |                         |                     |
|------|-------------------------|----------------------|--------|---|----------------------|--------|---|----------|-------------------------|------------|--------|---|-------------|----------------------|-----|-----------------------------|-------------------------|---------------------|
|      |                         |                      |        |   | MAX<br>IN.<br>24 HR. | D<br>T | E | OF<br>GE | NUMBER<br>OF DAYS<br>GE | MAX<br>IN. | D<br>T | E | MIN<br>IN.  | MEAN<br>DEGREES<br>F | AVG | AVG<br>FOR<br>MO.           | 6 HOUR<br>PERIODS<br>GE | FASTEST<br>MPH DIR. |

CENTRAL AND SOUTHERN ROCKY MOUNTAINS

|                       |       |      |    |      |      |    |    |    |   |   |      |    |    |      |      |       |     |    |
|-----------------------|-------|------|----|------|------|----|----|----|---|---|------|----|----|------|------|-------|-----|----|
| ARAPAHO BASIN, COLO.  | 77.2  | 12.2 | 14 | 6.26 | 1.40 | 20 | 11 | 10 | 5 | 1 | 103  | 21 | 58 | 7.6  | 15.8 | 9.2M  | 14M | 33 |
| ASPEN HIGHLANDS, CO   | 75.3  | 12.2 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 21.3 | 9.2M  | 14M | 33 |
| BEAR LAKE, RMNP, CO   | 62.0  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 51   | 21 | 25 | 15.3 | 20.0 | 10M   | 14M | 33 |
| BEAVER CREEK, COLO    | 50.5  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 83   | 21 | 48 | 10.3 | 15.0 | 11.0M | 17M | 41 |
| BERTHOUD PASS, COLO   | 33.7  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 83   | 21 | 48 | 10.3 | 15.0 | 11.0M | 17M | 41 |
| BRECKENRIDGE, COLO    | 3.1   | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 91   | 21 | 51 | 10.3 | 15.0 | 11.0M | 17M | 41 |
| COPPER MOUNTAIN, COLO | 81.5  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| CRESTED BUTTE, COLO   | 87.0  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| GOTHIC, COLO          | 114.1 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 102  | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| MARY JANE, COLO       | 80.5  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 87.2 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| MONARCH, COLO         | 84.5  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| PURGATORY, COLO       | 45.2  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| SUNLIGHT, COLO        | 44.5  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| TAOS, NEW MEXICO      | 44.5  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| TELLURIDE, COLO       | 44.5  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| VAIL, COLO            | 44.5  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |
| WINTER PARK 1E, COLO  | 52.0  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 77.4 | 21 | 40 | 14.3 | 20.0 | 10M   | 14M | 33 |

INTERMOUNTAIN

|                      |      |      |    |      |      |    |    |    |   |   |    |    |    |      |      |     |     |    |
|----------------------|------|------|----|------|------|----|----|----|---|---|----|----|----|------|------|-----|-----|----|
| BIG MOUNTAIN, MONT   | 40.5 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 98 | 21 | 40 | 14.3 | 20.0 | 10M | 14M | 33 |
| BIG SKY, MONT        | 60.5 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 98 | 21 | 40 | 14.3 | 20.0 | 10M | 14M | 33 |
| BRIDGER BOWL, MONT   | 73.0 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 98 | 21 | 40 | 14.3 | 20.0 | 10M | 14M | 33 |
| GRAND TARGHEE, WYO   | 81.5 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 98 | 21 | 40 | 14.3 | 20.0 | 10M | 14M | 33 |
| PARK WEST, UTAH      | 81.5 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 98 | 21 | 40 | 14.3 | 20.0 | 10M | 14M | 33 |
| SCHWEITZER BASIN, ID | 82.5 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 98 | 21 | 40 | 14.3 | 20.0 | 10M | 14M | 33 |
| SOLITUDE, IDAHO      | 82.5 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 98 | 21 | 40 | 14.3 | 20.0 | 10M | 14M | 33 |

WEST COAST

|                        |       |      |    |      |      |    |    |    |   |   |     |    |    |      |      |      |    |     |
|------------------------|-------|------|----|------|------|----|----|----|---|---|-----|----|----|------|------|------|----|-----|
| ALPINE MEADOWS, CAL    | 31.0  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |
| ALYESKA, CAL           | 43.0  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |
| CRYSTAL MOUNTAIN, WASH | 78.0  | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |
| HEAVENLY MOUNTAIN, CAL | 149.0 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |
| MAMMOTH MOUNTAIN, CAL  | 151.0 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |
| MT. RAINIER, PARADISE  | 151.0 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |
| SQUAW VALLEY, CALIF    | 151.0 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |
| STEVENSON, CALIF       | 151.0 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |
| SUGAR BOWL, CALIF      | 151.0 | 10.8 | 14 | 5.26 | 1.08 | 20 | 11 | 10 | 5 | 1 | 115 | 21 | 50 | 12.6 | 20.0 | 3.6M | 8M | 115 |

-- DATA INCOMPLETE OR MISSING  
-- ONE OR MORE DAYS OF RECORD  
-- IF M IS ENTERED IN MINC  
-- GE-- GREATER THAN OR EQUAL TO



FEBRUARY 1986  
AVALANCHE SUMMARY

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--=DATA INCOMPLETE OR MISSING
GE=GREATER THAN OR EQUAL TO
+=ALSO OCCURRED ON
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